PART G-2
FIRE PROTECTION

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WAC 296-24-585 Fire protection.

[Order 73-5, § 296-24-585, filed 5/9/73 and Order 73-4, § 296-24-585, filed 5/7/73.]

WAC 296-24-58501 Definitions applicable to fire protection.

(1) **"Class A fires"** are fires in ordinary combustible materials, such as wood, cloth, paper, and rubber.

(2) **"Class B fires"** are fires in flammable liquids, gases, and greases.

(3) **"Class C fires"** are fires which involve energized electrical equipment where the electrical nonconductivity of the extinguishing media is of importance. (When electrical equipment is deenergized, extinguisher for Class A or B fires may be used safely.)

(4) **"Class D fires"** are fires in combustible metals, such as magnesium, titanium, zirconium, sodium, and potassium.

(5) Classification of portable fire extinguishers: **"Portable fire extinguishers"** are classified for use on certain classes of fires and rated for relative extinguishing effectiveness at a temperature of plus 70°F by nationally recognized testing laboratories. This is based upon the preceding classification of fires and the fire extinguishment potentials as determined by fire tests.

Note: The classification and rating system described in this section is that used by Underwriters' Laboratories, Inc. and Underwriters' Laboratories of Canada and is based on extinguishing preplanned fires of determined size and description as follows:

(a) Class A rating-Wood and excelsior fires excluding deep-seated conditions.

(b) Class B rating-Two-inch depth gasoline fires in square pans.

(c) Class C rating-No fire test. Agent must be a nonconductor of electricity.

(d) Class D rating-Special tests on specific combustible metal fires.

(6) A **"light hazard"** is a situation where the amount of combustibles or flammable liquids present is such that fires of small size may be expected. These may include offices, schoolrooms, churches, assembly halls, telephone exchanges, etc.

(7) An **"ordinary hazard"** is a situation where the amount of combustibles or flammable liquids present is such that fires of moderate size may be expected. These may include mercantile storage and display, auto showrooms, parking garages, light manufacturing, warehouses not classified as extra hazard, school shop areas, etc.

(8) An **"extra hazard"** is a situation where the amount of combustibles or flammable liquids present is such that fires of severe magnitude may be expected. These may include woodworking, auto repair, aircraft servicing, warehouses with high-piled (14 feet or higher) combustibles, and processes such as flammable liquid handling, painting, dipping, etc.

(9) Sprinkler system: A **"sprinkler system,"** for fire protection purposes, is an integrated system of underground and overhead piping designed in accordance with fire protection engineering standards. The system includes a suitable water supply, such as a gravity tank, fire pump, reservoir, or pressure tank and/or connection by underground piping to a city main. The portion of the sprinkler system above ground is a network of specially sized or hydraulically designed piping installed in a building, structure or area, generally overhead, and to which sprinklers are connected in a systematic pattern. The system includes a controlling valve and a device for actuating an alarm when the system is in operation. The system is usually activated by heat from a fire and discharges water over the fire area.

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Note: The design and installation of water supply facilities such as gravity tanks, fire pumps, reservoirs, or pressure tanks, and underground piping are covered by NFPA Standards No. 22-1970, Water Tanks for Private Fire Protection; No. 20-1970, Installation of Centrifugal Fire Pumps and No. 24-1970, Outside Protection.

(10) Sprinkler alarms: A **"sprinkler alarm"** unit is an assembly of apparatus approved for the service and so constructed and installed that any flow of water from a sprinkler system equal to or greater than that from a single automatic sprinkler will result in an audible alarm signal on the premises.

(11) Class of service-Standpipe systems: **"Standpipe systems"** are grouped into three general classes of service for the intended use in the extinguishment of fire.

(a) Class I: For use by fire departments and those trained in handling heavy fire streams (2 1/2-inch hose).

(b) Class II: For use primarily by the building occupants until the arrival of the fire department (small hose).

(c) Class III: For use by either fire departments and those trained in handling heavy hose streams or by the building occupants.

(12) Class I service: **"Class I service"** is a standpipe system capable of furnishing the effective fire streams required during the more advanced stages of fire on the inside of buildings or for exposure fire.

(13) Class II service: **"Class II service"** is a standpipe system which affords a ready means for the control of incipient fires by the occupants of buildings during working hours and by watchperson and those present during the night time and holidays.

(14) Class III service: **"Class III service"** is a standpipe system capable of furnishing the effective fire streams required during the more advanced stages of fire on the inside of buildings as well as providing a ready means for the control of fires by the occupants of the building.

(15) Standpipe system: **"Standpipe systems"** are usually of the following types:

(a) A wet standpipe system having a supply valve open and water pressure maintained at all times.

(b) A standpipe system so arranged through the use of approved devices as to admit water to the system automatically by opening a hose valve.

(c) A standpipe system arranged to admit water to the system through manual operation of approved remote control devices located at each hose station.

(d) Dry standpipe having no permanent water supply. See also (11) of this section.

(16) Type I storage: **"Type I storage"** is that in which combustible commodities or noncombustible commodities involving combustible packaging or storage aids are stored over 15 feet but not more than 21 feet high in solid piles or over 12 feet but not more that 21 feet high in piles that contain horizontal channels. Minor quantities of commodities of hazard greater than ordinary combustibles may be included without affecting this general classification.

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(17) Type II storage: **"Type II storage"** is that in which combustible commodities or noncombustible commodities involving combustible packaging or storage aids are stored not over 15 feet high in solid piles or not over 12 feet high in piles that contain horizontal channels. Minor quantities of commodities of hazard greater than ordinary combustibles may be included without affecting this general classification.

(18) Type III storage: **"Type III storage"** is that in which the stored commodities, packaging, and storage aids are noncombustible or contain only a small concentration of combustibles which are incapable of producing a fire that would cause appreciable damage to the commodities stored or to noncombustible wall, floor or roof construction. Ordinary combustible commodities in completely sealed noncombustible containers may qualify in this classification. General commodity storage that's subject to frequent changing and storage of combustible packaging and storage aids is excluded from this category.

(19) Approved: **"Approved"** means listed or approved by: (a) At least one of the following nationally recognized testing laboratories: Factory Mutual Engineering Corp.; Underwriters' Laboratories, Inc., or (b) federal agencies such as Mine Safety and Health Administration (MSHA); the National Institute for Occupational Safety and Health (NIOSH); Department of Transportation; or U.S. Coast Guard, which issue approvals for such equipment.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-24-58501, filed 7/20/94, effective 9/20/94; Order 74-27, § 296-24-58501, filed 5/7/74; Order 73-5, § 296-24-58501, filed 5/9/73 and Order 73-4, § 296-24-58501, filed 5/7/73.]

WAC 296-24-58503 Scope, application and definitions applicable.

(1) Scope. This section contains requirements for fire brigades, and all portable and fixed fire suppression equipment, fire detection systems, and fire or employee alarm systems installed to meet the fire protection requirements of this chapter.

(2) Application. This section applies to all employments except for maritime, construction and agriculture.

(3) Definitions applicable to this section.

(a) **"After-flame,"** means the time a test specimen continues to flame after the flame source has been removed.

(b) **"Aqueous film forming foam (AFFF),"** means a fluorinated surfactant with a foam stabilizer which is diluted with water to act as a temporary barrier to exclude air from mixing with the fuel vapor by developing an aqueous film on the fuel surface of some hydrocarbons which is capable of suppressing the generation of fuel vapors.

(c) **"Approved,"** means acceptable to the director under the following criteria:

(i) If it is accepted, or certified, or listed, or labeled or otherwise determined to be safe by a nationally recognized testing laboratory; or

(ii) With respect to an installation or equipment of a kind which no nationally recognized testing laboratory accepts, certifies, lists, labels, or determines to be safe, if it is inspected or tested by another federal agency and found in compliance with the provisions of the applicable National Fire Protection Association Fire Code; or

(iii) With respect to custom-made equipment or related installations which are designed, fabricated for, and intended for use by its manufacturer on the basis of test data which the employer keeps and makes available for inspection to the director; and

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(iv) For the purposes of (c) of this subsection:

(A) Equipment is listed if it is of a kind mentioned in a list which is published by a nationally recognized testing laboratory which makes periodic inspections of the production of such equipment and which states that such equipment meets nationally recognized standards or has been tested and found safe for use in a specified manner;

(B) Equipment is labeled if there's attached to it a label, symbol, or other identifying mark of a nationally recognized testing laboratory which makes periodic inspections of the production of such equipment and whose labeling indicates compliance with nationally recognized standards or tests to determine safe use in a specified manner;

(C) Equipment is accepted if it has been inspected and found by a nationally recognized testing laboratory to conform to specified plans or to procedures of applicable codes;

(D) Equipment is certified if it has been tested and found by a nationally recognized testing laboratory to meet nationally recognized standards or to be safe for use in a specified manner or is of a kind whose production is periodically inspected by a nationally recognized testing laboratory, and if it bears a label, tag, or other record of certification; and

(E) Refer to federal regulation 29 CFR 1910.7 for definition of nationally recognized testing laboratory.

(d) **"Automatic fire detection device,"** means a device designed to automatically detect the presence of fire by heat, flame, light, smoke or other products of combustion.

(e) **"Buddy-breathing device,"** means an accessory to self-contained breathing apparatus which permits a second person to share the same air supply as that of the wearer of the apparatus.

(f) **"Carbon dioxide,"** means a colorless, odorless, electrically nonconductive inert gas (chemical formula CO_2) that's a medium for extinguishing fires by reducing the concentration of oxygen or fuel vapor in the air to the point where combustion is impossible.

(g) **"Class A fire,"** means a fire involving ordinary combustible materials such as paper, wood, cloth, and some rubber and plastic materials.

(h) **"Class B fire,"** means a fire involving flammable or combustible liquids, flammable gases, greases and similar materials, and some rubber and plastic materials.

(i) **"Class C fire,"** means a fire involving energized electrical equipment where safety to the employee requires the use of electrically nonconductive extinguishing media.

(j) **"Class D fire,"** means a fire involving combustible metals such as magnesium, titanium, zirconium, sodium, lithium and potassium.

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(k) **"Dry chemical,"** means an extinguishing agent composed of very small particles of chemicals such as, but not limited to, sodium bicarbonate, potassium bicarbonate, urea-based potassium bicarbonate, potassium chloride, or monoammonium phosphate supplemented by special treatment to provide resistance to packing and moisture absorption (caking) as well as to provide proper flow capabilities. Dry chemical doesn't include dry powders.

(l) **"Dry powder,"** means a compound used to extinguish or control Class D fires.

(m) **"Education,"** means the process of imparting knowledge or skill through systematic instruction. It doesn't require formal classroom instruction.

(n) **"Enclosed structure,"** means a structure with a roof or ceiling and at least two walls which may present fire hazards to employees, such as accumulations of smoke, toxic gases and heat similar to those found in buildings.

(o) **"Extinguisher classification,"** means the letter classification given an extinguisher to designate the class or classes of fire on which an extinguisher will be effective.

(p) **"Extinguisher rating,"** means the numerical rating given to an extinguisher which indicates the extinguishing potential of the unit based on standardized tests developed by Underwriters' Laboratories, Inc.

(q) **"Fixed extinguishing system,"** means a permanently installed system that either extinguishes or controls a fire at the location of the system.

(r) **"Flame resistance,"** is the property of materials, or combinations of component materials, to retard ignition and restrict the spread of flame.

(s) **"Foam,"** means a stable aggregation of small bubbles which flow freely over a burning liquid surface and form a coherent blanket which seals combustible vapors and thereby extinguishes the fire.

(t) **"Gaseous agent,"** is a fire extinguishing agent which is in the gaseous state at normal room temperature and pressure. It has low viscosity, can expand or contract with changes in pressure and temperature, and has the ability to diffuse readily and to distribute itself uniformly throughout an enclosure.

(u) **"Halon 1211,"** means a colorless, faintly sweet smelling, electrically nonconductive liquefied gas (chemical formula $CBrC1F_2$) which is a medium for extinguishing fires by inhibiting the chemical chain reaction of fuel and oxygen. It is also known as bromochlorodifluoromethane.

(v) **"Halon 1301,"** means a colorless, odorless, electrically nonconductive gas (chemical formula $CBrF_3$) which is a medium for extinguishing fires by inhibiting the chemical chain reaction of fuel and oxygen. It is also known as bromotrifluoromethane.

(w) **"Helmet,"** is a head protective device consisting of a rigid shell, energy absorption system and chin strap intended to be worn to provide protection for the head or portions thereof, against impact, flying or falling objects, electric shock, penetration, heat and flame.

(x) **"Incipient stage fire,"** means a fire which is in the initial or beginning stage and which can be controlled or extinguished by portable fire extinguishers, Class II standpipe or small hose systems without the need for protective clothing or breathing apparatus.

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(y) **Industrial fire brigade**: An organized group of employees whose primary employment is other than fire fighting who are knowledgeable, trained and skilled in specialized operations based on site-specific hazards present at a single commercial facility or facilities under the same management.

(z) **"Inspection,"** means a visual check of fire protection systems and equipment to ensure that they are in place, charged, and ready for use in the event of a fire.

(aa) **"Interior structural fire fighting,"** means the physical activity of fire suppression, rescue or both, inside of buildings or enclosed structures which are involved in a fire situation beyond the incipient stage.

(bb) **"Lining,"** means a material permanently attached to the inside of the outer shell of a garment for the purpose of thermal protection and padding.

(cc) **"Local application system,"** means a fixed fire suppression system which has a supply of extinguishing agent, with nozzles arranged to automatically discharge extinguishing agent directly on the burning material to extinguish or control a fire.

(dd) **"Maintenance,"** means the performance of services on fire protection equipment and systems to assure that they will perform as expected in the event of a fire. Maintenance differs from inspection in that maintenance requires the checking of internal fitting, devices and agent supplies.

(ee) **"Multipurpose dry chemical,"** means a dry chemical which is approved for use on Class A, Class B and Class C fires.

(ff) **"Outer shell,"** is the exterior layer of material on the fire coat and protective trousers which forms the outermost barrier between the fire fighter and the environment. It is attached to the vapor barrier and liner and is usually constructed with a storm flap, suitable closures, and pockets.

(gg) **"Positive-pressure breathing apparatus,"** means self-contained breathing apparatus in which the pressure in the breathing zone is positive in relation to the immediate environment during inhalation and exhalation.

(hh) **"Predischarge employee alarm,"** means an alarm which will sound at a set time prior to actual discharge of an extinguishing system so that employees may evacuate the discharge area prior to system discharge.

(ii) **"Quick disconnect valve,"** means a device which starts the flow of air by inserting of the hose (which leads from the facepiece) into the regulator of self-contained breathing apparatus, and stops the flow of air by disconnection of the hose from the regulator.

(jj) **"Sprinkler alarm,"** means an approved device installed so that any waterflow from a sprinkler system equal to or greater than that from single automatic sprinkler will result in an audible alarm signal on the premises.

(kk) **"Sprinkler system,"** means a system of piping designed in accordance with fire protection engineering standards and installed to control or extinguish fires. The system includes an adequate and reliable water supply, and a network of specially sized piping and sprinklers which are interconnected. The system also includes a control valve and a device for actuating an alarm when the system is in operation.

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(ll) **"Standpipe systems:"**

(i) **"Class I standpipe system,"** means a two and one-half-inch (6.3 cm) hose connection for use by fire departments and those trained in handling heavy fire streams.

(ii) **"Class II standpipe system,"** means a one and one-half-inch (3.8 cm) hose system which provides a means for the control or extinguishment of incipient stage fires.

(iii) **"Class III standpipe system,"** means a combined system of hose which is for the use of employees trained in the use of hose operations and which is capable of furnishing effective water discharge during the more advanced stages of fire (beyond the incipient stage) in the interior of workplaces. Hose outlets are available for both one and one-half-inch (3.8 cm) and two and one-half-inch (6.3 cm) hose.

(iv) **"Small hose system,"** means a system of hose ranging in diameter from five-eighths-inch (1.6 cm) up to one and one-half-inch (3.8 cm) which is for the use of employees and which provides a means for the control and extinguishment of incipient stage fires.

(mm) **"Total flooding system,"** means a fixed suppression system which is arranged to automatically discharge a predetermined concentration of agent into an enclosed space for the purpose of fire extinguishment or control.

(nn) **"Training,"** means the process of making proficient through instruction and hands-on practice in the operation of equipment, including respiratory protection equipment, that's expected to be used in the performance of assigned duties.

(oo) **"Vapor barrier,"** means that material used to prevent or substantially inhibit the transfer of water, corrosive liquids and steam or other hot vapors from the outside of a garment to the wearer's body.

[Statutory Authority: RCW 49.17.040. 99-05-080 (Order 98-14), § 296-24-58503, filed 02/17/99, effective 06/01/99. Statutory Authority: RCW 49.17.010, [49.17].050 and [49.17].060. 95-22-015, § 296-24-58503, filed 10/20/95, effective 1/16/96. [Statutory Authority: Chapter 49.17 RCW. 94-06-068 (Order 93-17), § 296-24-58503, filed 3/2/94, effective 3/1/95; 88-23-054 (Order 88-25), § 296-24-58503, filed 11/14/88; 87-24-051 (Order 87-24), § 296-24-58503, filed 11/30/87. Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-58503, filed 12/24/81.]